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THE INVENTION SCIENCE FUND
CLARENCE T. TEGREENE
11235 SE 6TH STREET
SUITE 200
BELLEVUE, WA 98004

| EXAMINER | |
|---|---|
| ARTMAN, THOMAS R | |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* EDWARD S. BOYDEN,
GLENN B. FOSTER, RODERICK A. HYDE,
MURIEL Y. ISHIKAWA, EDWARD K.Y. JUNG,
ERIC C. LEUTHARDT, ROBERT W. LORD,
NATHAN P. MYHRVOLD, DENNIS J. RIVET,
MICHAEL A. SMITH, CLARENCE T. TEGREENE,
THOMAS A. WEAVER, CHARLES WHITMER,
LOWELL L. WOOD JR., and VICTORIA Y.H. WOOD

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Appeal 2011-007613
Application 12/011,627
Technology Center 2800

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Before MAHSHID D. SAADAT, ROBERT E. NAPPI, and
LARRY J. HUME, *Administrative Patent Judges*.

NAPPI, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) of the rejection of claims 2 through 34. Claim 1 was previously canceled. An oral hearing was held October 10, 2013.

We affirm.

## INVENTION

The invention is directed to a method for visualizing, imaging or providing information of a portion of an individual via a Compton Scattered X-ray technique. *See* abstract of Appellants' Specification. Claim 2 is representative of the invention and reproduced below:

> 2. A method, comprising:
>
> determining a location of an at least one Compton Scattered X-ray event occurring within an at least some matter of at least a portion of an individual based at least in part on:
>
> determining a relative angle at which an at least one applied X-ray is applied to the at least some matter of the at least the portion of the individual,
>
> determining a relative position from which the at least one applied X-ray is applied to the at least some matter of the at least the portion of the individual,
>
> determining a relative position at which at least one induced Compton scattered X-ray photon is received following scattering at the at least one Compton Scattered X-ray event, and
>
> determining a relative angle at which the at least one induced Compton scattered X-ray photon is received following scattering at the at least one Compton Scattered X-ray event;
>
> wherein the determining the location of the at least one Compton Scattered X-ray event occurring within the at least some matter of the at least the portion of the individual includes

> determining that the at least one Compton scattered X-ray event occurs within at least one substantially Compton scattered X-ray depth range extending to an at least one prescribed substantially Compton X-ray scattered depth that is at least partially dependent on an energy level of the at least one applied X-ray.

## REJECTIONS AT ISSUE

The Examiner has rejected claims 4, 5, 24 through 28, and 35 through 43 under 35 U.S.C. § 112, second paragraph, as being indefinite. Answer 3-4.[1]

The Examiner has rejected claims 2 through 24 and 27 through 43 under 35 U.S.C. § 102(e) as anticipated by Arsenault (U.S. 7,203,276 B2, Apr. 10, 2007). Answer 4-7.

The Examiner has rejected claims 25 and 26 under 35 U.S.C. § 103(a) as unpatentable over Arsenault and Rasche (U.S. 6,865,248 B1, Mar. 8, 2005). Answer 8.

*Rejection under 35 U.S.C. § 112*

## ISSUES

Appellants argue on pages 15 through 19 of the Appeal Brief and page 6 of the Reply Brief that the Examiner's rejection under 35 U.S.C. § 112 is in error.[2] These arguments present us with the issue:

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[1] Throughout this opinion we refer to the Examiner's Answer mailed on January 24, 2011.

[2] Throughout this opinion we refer to Appellants' Appeal Brief filed on October 28, 2010 and Reply Brief dated March 24, 2011.

a) With respect to claims 4, 5, 24 through 28, and 35 through 43, did the Examiner err in finding the recitation of "visualizing, imaging or providing information" renders the claims indefinite?

## ANALYSIS

We have reviewed the Examiner's rejections in light of Appellants' contentions that the Examiner has erred. Further, we have reviewed the Examiner's response to Appellants' arguments. We agree with Appellants' conclusions with respect to issue a).

*Issue a)*

The Examiner states:

> [T]he confusing phrase: "Compton scattered x-ray visualizing, imaging or information providing" or "Compton scattered x-ray visualizer, imager or information provider". These phrases are cumbersome and cause uncertainty. The "or" causes confusion surrounding as to the limitations surrounding this phrase. It is unclear what is being listed in the alternative, and, therefore, what is in fact required by the claims. It is further unclear what is being "provided" in each claim. Upon further analysis, the term "imaging" is a form of "visualizing", and both terms are specific forms of "information".

Answer 4. We agree with the Examiner that this phrase is cumbersome and, when interpreted in light of Appellants' Specification, the three terms are used as names to identify the process to identify and present information from a Compton Scattered X-ray, i.e., they describe roughly same thing. We concur with the Examiner and consider the term "providing information" to be the broadest of the three terms and to encompass both visualizing and imaging. Nonetheless, recitation of these three names for the process in the

alternative does not render the claim ambiguous. Thus, we do not consider the use of the term "provided" to be unclear as stated by the Examiner, rather it is merely part of the name of the process "providing information" and not a part of a method. Accordingly, we will not sustain the Examiner's rejection of claims 4, 5, 24 through 28, and 35 through 43 under 35 U.S.C. § 112, second paragraph.

*Rejection under 35 U.S.C. § 102(e) as anticipated by Arsenault*

ISSUES

Appellants argue on pages 20 through 25 of the Appeal Brief and pages 7 through 10 of the Reply Brief that the Examiner's rejection under 35 U.S.C. § 102(e) as anticipated by Arsenault is in error. These arguments present us with the issues:

b) Did the Examiner err in finding that Arsenault teaches the prescribed "Compton X-ray scattered depth . . . partially dependent on an energy level of the at least one applied X-ray"?

c) With respect to claim 3, did the Examiner err in finding that Arsenault teaches the "first prescribed . . . Compton X-ray scattered depth . . . partially dependent on a first energy level of the at least one applied X-ray," and a "second prescribed . . . Compton X-ray scattered depth . . . partially dependent on a second energy level of the at least one applied X-ray"?

ANALYSIS

We have reviewed the Examiner's rejections in light of Appellants' contentions that the Examiner has erred. Further, we have reviewed the

Examiner's response to Appellants' arguments. We disagree with Appellants' conclusions with respect to issues b) and c).

The Examiner has provided a comprehensive response to issues b) and c). Specifically, the Examiner states that the claim language is open-ended and does not preclude depth being dependent upon other factors. Further, the Examiner finds the energy of the applied X-ray must be sufficient to penetrate the object of interest and to cause Compton scattering. Answer 10-12. That is, the Examiner has found that visualization of the Compton X-ray scattering will not occur for depths beyond the X-ray penetration and thus, the depth visualized is at least partially dependent upon the energy level of the X-ray. These findings by the Examiner are supported by a preponderance of evidence and we concur with the Examiner's findings. Accordingly, we sustain the Examiner's rejection of claims 4 through 24 and 27 through 43 under 35 U.S.C. § 102(e) as anticipated by Arsenault.

*Rejection under 35 U.S.C. § 103(a)*

ISSUES

Appellants argue on pages 30 through 32 of the Appeal Brief and pages 10 through 12 of the Reply Brief that the Examiner's rejection under 35 U.S.C. § 103(a) as unpatentable over Arsenault and Rasche is in error. These arguments present us with the issue:

d) Did the Examiner err in finding that Arsenault and Rasche teach the prescribed visualizing depth "is performed at a rate sufficient to substantially capture a physical motion"?

## ANALYSIS

We have reviewed the Examiner's rejections in light of Appellants' contentions that the Examiner has erred. Further, we have reviewed the Examiner's response to Appellants' arguments. We disagree with Appellants' conclusion with respect to issue d). The Examiner's response has provided a comprehensive explanation of how Arsenault and Rasche teach the disputed limitation. Answer 12. Further, representative claim 25 merely requires substantially capturing physical motion that is consistent with an individual-based physiological process, which does not distinguish over the low motion point of the image as the Examiner finds Rasche teaches. We concur with the Examiner's findings as they are supported by a preponderance of evidence. Accordingly, we sustain the Examiner's rejection of claims 25 and 26 under 35 U.S.C. § 103(a).

## DECISION

We will not sustain:

a) The Examiner's rejection of claims 4, 5, 24 through 28, and 35 through 43 under 35 U.S.C. § 112, second paragraph.

We sustain:

a) The Examiner's rejection of claims 2 through 24 and 27 through 43 under 35 U.S.C. § 102(e) as anticipated by Arsenault.

b) The Examiner's rejection of claims 25 and 26 under 35 U.S.C. § 103 (a) as unpatentable over Arsenault and Rasche

The decision of the Examiner to reject claims 2 through 43 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

msc